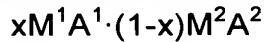


## CLAIMS

1. A high-brightness mechanoluminescence material consisting of a composite semiconductor crystal represented by the general formula



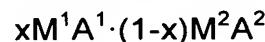
(in the formula, each of  $M^1$  and  $M^2$  is, independently from the other, an element selected from Zn, Mn, Cd, Cu, Eu, Fe, Co, Ni, Mg and Ca, each of  $A^1$  and  $A^2$  is an atom selected independently from chalcogens with the proviso that  $M^1A^1$  and  $M^2A^2$  differ each from the other, and  $x$  is a positive number smaller than 1.).

2. The high-brightness mechanoluminescence material described in Claim 1 in which the composite semiconductor crystal has a mixed structure of the wurtzite-type structure and the zincblende-type structure.

3. The high-brightness mechanoluminescence material described in Claim 1 in which  $M^1$  is Mn or Eu and  $A^1$  and  $A^2$  are each the same chalcogen as the other.

4. The high-brightness mechanoluminescence material described in Claim 1 in which  $M^2$  is constituted of Zn, Cd or a combination of Zn and Cu.

5. A method for the preparation of the high-brightness mechanoluminescence material defined in Claim 1, which comprises the steps of; mixing source materials of the constituent ingredients; heating the thus obtained mixture in vacuum at a temperature lower than the sublimation point of the product to produce a composition represented by the general formula



(in the formula, each of  $M^1$  and  $M^2$  is, independently from the other, an element selected from Zn, Mn, Cd, Cu, Eu, Fe, Co, Ni, Mg and Ca, each of  $A^1$  and  $A^2$  is an atom selected independently from chalcogens and  $x$  is a positive number smaller than 1, with the proviso that  $M^1A^1$  and  $M^2A^2$  differ each from the other); causing sublimation of the composition at a temperature equal to or higher than the sublimation point of the composition; and crystallizing the thus generated sublimate by condensation at a temperature lower than the sublimation point thereof.